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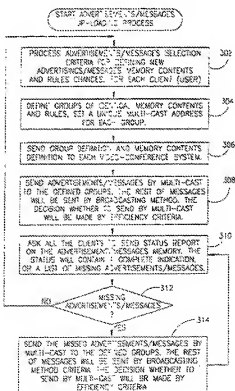
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[Continued on next page]

(54) Title: A METHOD AND SYSTEM FOR COMMUNICATING WITH A TARGETED AUDIENCE



(57) Abstract: A method for communicating with a targeted audience is provided. The method includes the steps of identifying the targeted audience (302); determining the subject matter of interest to the targeted audience (304); inserting the subject matter of interest data into a video stream being transmitted to the targeted audience, thereby amending the video stream; and displaying the amended video stream to the targeted audience.

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## A METHOD AND SYSTEM FOR COMMUNICATING WITH A TARGETED AUDIENCE

### FIELD AND BACKGROUND OF THE INVENTION

5           The present invention relates to an E-commerce system and specifically to a method and system for communicating with phone users and presenting advertisements and messages to the user during calls.

          Video conference systems allowing two or more users to simultaneously talk to each other and view each other are well known. One example of such  
10       systems is the desktop type video conference system, which includes a personal computer (PC), system including display monitor, keyboard and a mouse for input operations, a video camera and a desk microphone. Generally, an expansion board having a Codec and a communication line I/F is mounted in an expansion slot of the PC body. In the video conference system, a moving image sent from  
15       one party is displayed on the monitor of the other user.

          The use of one-to-one video conferencing is not universal and as popular as telephone voice calls and the use has been limited because of the cost of the video units.

          In contrast to the use of one-to-one video conferencing, mobile phones  
20       (which have display screens) have become extremely popular over the past few years and are increasingly being used for supplying other services such as Internet access.

          Communication via the Internet has become extremely popular during the past few years and the Internet is used today for transmitting voice and video

images as well as data. Web pages are commonly used for advertising purposes and are capable of identifying the location of the Internet user through the address of the IP (Internet Provider) and filtering advertisements so as to display advertisements in the language of the user, the language being ascertained from  
5 the user's IP address.

However, the advertisements and messages are sent without regard to the type and profile of the user and since they are not user-specific, the effectiveness of such advertisements is reduced.

## SUMMARY OF THE INVENTION

An object of the invention is to provide a system and method of communication using video conferencing systems, which overcome the limitations of present day, video conferencing systems.

- 5 A further object of the invention is to provide a system and method for communicating with and advertising to a targeted audience via a telephone system including mobile phones and video phone and conferencing systems. Advertisements and messages are inserted into the video stream being transmitted to the recipient. The recipient is identified by the system and the
- 10 advertisements and messages which are sent are tailored to suit the recipient's profile. For example, advertisements relating to lingerie would only be sent to a female recipient within a certain age group. This form of advertising which targets a specific audience is very efficient.

- The advertisements/messages may be displayed at any time during a call
- 15 without interfering with the audio of the call and the rest of the video image being transmitted.

- It is a further object of the image that the user/recipient will be able to activate a response to the advertisement by pressing the advertisement via a touch screen, for example. The user response can include, for example, calling
- 20 back to another user, displaying another screen for further selection or for obtaining other information, accessing the Internet for browsing the web, sending the other user an information pack or purchasing.

Furthermore, image recognition and voice recognition methods can be combined and integrated into the video conference system and can be activated

during the call to provide information that will be used to identify the user and allow accurate targeting of the advertisements.

The user is able to get access to a pre-defined call-center by pressing a "Call-Me" button, for example. The user is also able to get directory services by pressing a pre-defined button. This directory can display a list of categories from which the user will be able to select by browsing. This categories and directory may be stored on the video-conferencing system memory or on a remote site. The directory categories, and selection may be presented on a smart criteria such as last-called, last selected, preferred categories or other methods.

The display on the screen, the video received and the video sent may be controlled and changed by image processing methods for replacing the background by a pre-defined or stored background, or for placing the advertisements or any graphical background on the video without hiding the users, or for other purposes.

The communication link may be based on an IP network, such as cable-modem, xDSL, Ethernet, satellite communication, wireless, cellular or any other suitable communication method.

The user can browse the world-wide-web and send and receive e-mails via the Internet. The user can browse the advertisements/messages and respond to them, during and after the end of calls. The user can also respond to advertisement/messages or access the Internet during calls and can forward the information to another party.

In a preferred embodiment, a remote management center controls and processes the video stream so as to add advertisements and messages. A

particular video, advertisement, message, text or voice announcement can be inserted by overriding the current state of the video-conferencing system or during conversation, for example, to announce headline breaking events such as earthquakes, storms and war situations.

- 5           There is thus provided, in accordance with a preferred embodiment of the present invention, a method for communicating with a targeted audience. The method includes the steps of:

identifying the targeted audience;

determining the subject matter of interest to the targeted audience;

- 10           inserting the subject matter of interest data into a video stream being transmitted to the targeted audience, thereby amending the video stream ; and  
displaying the amended video stream to the targeted audience.

The subject matter of interest includes any of a group including advertisements, messages and news items.

- 15           Furthermore, in accordance with a preferred embodiment of the present invention, the step of identifying includes the step of identifying the image of the targeted audience being transmitted during a video call by means of an image recognition engine.

- Furthermore, in accordance with a preferred embodiment of the present  
20   invention, the step of inserting includes the steps of:

decoding the incoming video stream;

mixing the incoming video stream with the subject matter of interest;

encoding the mixed video stream; and

transmitting to the targeted audience.

The step of inserting is carried out in real time.

Furthermore, in accordance with a preferred embodiment of the present invention, the step of determining includes the steps of:

analyzing any of a group of criteria including time and dates of the call,  
5 priority rules, user-based rules and call status and advertisement history information; and

applying pre-defined weights to the results of the analysis.

Furthermore, in accordance with a preferred embodiment of the present invention, the video stream is transmitted over the Internet and a remote  
10 management server and a gateway are in communication with the Internet. The method further includes the step of the gateway controlling the steps of identifying and determining.

The method according to claim 5, and further includes a telecommunications link in communication with the Internet.

15 Furthermore, in accordance with a preferred embodiment of the present invention, the telecommunications link includes any of a group including wireless, PSTN and cellular networks. The wireless networks include any of a group including CDMA, GPRS platform for mobile data networking services, Wideband CDMA, IP protocol integration and platforms for mobile multimedia  
20 communications.

Furthermore, in accordance with a preferred embodiment of the present invention, the method further includes the step of the targeted audience inputting a response to the displayed video stream.



### BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be understood and appreciated more fully from the following detailed description taken in conjunction with the appended drawings in which:

5           Fig. 1 is a schematic illustration of a communication system, constructed and operative in accordance with a preferred embodiment of the present invention;

          Fig. 2 illustrates a typical videophone illustrating the display of advertisements during a video phone call;

          Fig. 3 is a schematic block diagram illustration of the connection between  
10   the remote management center and video phones/conference systems;

          Fig. 4 is a schematic flow chart diagram illustration of the advertisements (banners) display process;

          Fig. 5 is a schematic block diagram illustration of the criteria for advertisement selection;

15           Fig. 6 is a schematic flow chart diagram illustration of the criteria for advertisement selection on a communication system;

          Fig. 7 is a schematic flow chart diagram illustration of the advertisements/ messages up-loading process from the remote management center to the video-conferencing systems memory;

20           Fig. 8 is a schematic illustration of the architecture of the gateway used with the system of Fig.1;

          Fig. 9 is a schematic illustration of the Video Processing Module (VPM) used with the gateway of Fig. 8;

Fig. 10 is a schematic flow chart diagram illustration of the gateway of Fig. 8; and

Fig. 11 is a schematic flow chart diagram illustration of the main gatekeeper of Fig. 8.

## DESCRIPTION OF THE PRESENT INVENTION

Reference is now made to Fig. 1, which is a schematic illustration of a communications system, utilizing a remote management server 110 and a gateway 150, constructed and operative in accordance with a preferred  
5 embodiment of the present invention.

The communications system further illustrates the connections between the remote management server 110 and the gateway 150 and the Internet 152 which is shown for exemplary purposes only as the communications hub, through which PPP connections may be made, preferably utilizing a H.323 compliant  
10 terminal 154. Communication may be via cellular switch 156 from mobile devices 158 via a wireless network 160 or any other wireless or telecommunications link in communication with the Internet 152.

In an alternative embodiment, a video conferencing system may be used. Fig. 2 illustrates a videophone 100 used for video conferencing, displaying the  
15 caller 102 during a video phone call. Also displayed is an advertisement 104, which has been inserted within the video stream being transmitted to the recipient of the call.

Advertisements and messages are inserted into the video stream being transmitted to the recipient. The recipient is identified by the system and the  
20 advertisements and messages which are sent are tailored to suit the recipient's profile.

Gateway 150 performs real time mixing of the advertisement/message data, which may be stored on the management server 110 or in any other location in communication with gateway 150.

The wireless networks 160 include but are not limited to CDMA, GPRS platform for mobile data networking services, WCDMA – Wideband CDMA, IP protocol integration and 3<sup>rd</sup> Generation mobile terminals, such as platforms for mobile multimedia communications, includes voice, video and data transfers (rich  
5 call).

The communication link may be any suitable link for an IP network, such as cable-modem, xDSL, Ethernet, satellite communication, wireless, cellular or any other communication methods.

Fig. 3 is a schematic block diagram illustration of the connection between  
10 the remote management center 110 and a plurality of video-phones 100 (or conference systems).

The remote management center 110 is a server which controls the routing of the call from the caller to the recipient as well as the processing customer and advertiser information. The remote management center 110 receives information  
15 from advertisers 112, information regarding clients 114, billing information from the telephone carriers 116. The remote management center 110 also processes the customer requests to the call center 118, billings to customers and advertisers 120 and can supply statistical information to the advertisers 122.

It will be appreciated that any communication system such as mobile  
20 phones may be used in place of the video-phone system described.

Reference is now made to Fig. 4, which is a schematic flow chart diagram illustration of the display of advertisements or banners during a video phone conference or call.

During a call, an advertisement for inserting into the video stream being transmitted to the recipient is selected according to pre-defined criteria including but not limited to the profile of the recipient (step 202). The advertisement may allow the recipient to respond and select an option presented to him on his  
5 screen/monitor. The advertisement is displayed for a set time (step 204).

If a response is made by the recipient (user) (step 206), the response is stored on the recipient's PC, for example, and sent to the remote management center 110 (step 208). If the advertisement has an optional link to another advertisement (for example) (step 210), the information is processed (step 212)  
10 and the linked advertisement is then displayed and steps 202-210 are repeated for the linked advertisement (loop 214).

If the recipient (user) does not respond (step 206) the advertisement continues to be displayed for a set time, after which another advertisement can be selected (loop 216 to step 202). After step 210, if a linked advertisement is not  
15 selected, another advertisement can be selected (loop 218 to step 202).

Reference is now made to Fig. 5, which is a schematic block diagram illustration of the criteria for advertisement selection.

The criteria include, but are not limited to:

- a. Clients (user) information, such as demographic, socioeconomic and  
20 habits;
- b. Clients (user) information gathered by the system and user behavior, such as calling habits, and buying preferences;
- c. Current Clients (user) advertisements memory contents, by means of current rules, priority advertisements and memory overload; and

- d. Advertisers rules, display order, timing, quantity, targeting criteria such as clients' demographic / socioeconomic status etc.

The 'rules'/ criteria for each client are stored in the remote management center 110 for access later during display (see Fig. 4).

- 5           Reference is now made to Fig. 6, which is a schematic flow chart diagram illustration of the criteria for advertisement selection on a communication system.

The selection of advertisements is based on, but is not limited to, an analysis of the following criteria:

- a. time and dates;
- 10          b. priority rules;
- c. user-based rules and call status; and
- d. advertisement history information;

Pre-defined weights are then applied to results of the above rules. The applicable advertisement is then selected for display.

- 15           Reference is now made to Fig. 7, which is a schematic flow chart diagram illustration of the advertisements/messages up-loading process from the remote management center to the video-conferencing systems memory.

- The criteria for selecting the advertisements/messages are processes, including defining new advertising/messages and updating the memory contents and any rules changes, for each client (user) (step 302).
- 20

Identical memory contents and rules for groups are defined and a unique multi-cast address for each group is set (step 304).

Group definition and memory contents definition are sent to each communication system (step 306) and advertisements/messages are sent by

multi-cast to the defined groups (step 308). The rest of the messages are sent by broadcasting. The decision whether to send by multi-cast is determined by the efficiency criteria.

Clients are requested to send a status report so as to determine whether  
5 any advertisements/ messages are missing (step 310), and if so, the missing advertisements/messages are then sent by multi-cast to the defined groups (step 312), or alternatively by broadcasting.

Fig. 8 illustrates the architecture of the gateway 150, which includes user identification 164, H323 gatekeeper 166, H323 terminal to call center 168 and  
10 The GW remote management 170, elements of the GW Control Application. Also included are a video processing module (VPM) 172, session analyzer 174, database interface 176, H323 protocol stack 178, TCP/IP stack 180 and network interface 182.

In order to perform user identification 164, an image recognition engine is  
15 used to identify the current speaking user. In case of voice only or data only calls personal identifier could be used.

The GW remote management 170 supports SNMP management in order to be managed from standard SNMP stations and is capable of handling up to 500 concurrent video sessions with advertisement mixing.

20 The session analyzer 174 is a software module to process RTP reframing for video data. The session analyzer receives video data encapsulated in RTP, removes the RTP header and sends the video to VPM for mixing. VPM processes the mixing and returns the new video data back to the session analyzer in order to

send new stream to participants. The session analyzer 174 is responsible for detecting user interaction signals and passing them to the GW Control Application.

The Video Processing Module (VPM) is illustrated in Fig. 9. The incoming H262/H263 stream is decoded 176 and then mixed in the digital mixer 178 with the  
5 relevant advertisement data 175 selected for the client. The video stream is then encoded 180 and transmitted to the recipient.

The operation of the GW control application work is illustrated in the flow diagram of Fig. 10, to which reference is now made.

On receipt of a call (352), details of the call are stored: (i.e., caller's  
10 telephone number, time of the call, telephone company through which the call was made). The details are recorded for control and follow up and for charging the telephone company.

The identification of the caller (354) is made using the hardware/software which may be located on a separate server. Telephone characteristics (i.e.,  
15 monitor size, inclusive capabilities of the browser, etc.) are included in the transmission, which is received from the telephone (according to rules defined in the relevant protocols).

Optionally, the call characteristics are identified and include a speech  
identification element which is able to characterize conversation language and  
20 subjects.

The call is then routed via the GW (356) and if the routing is successful, the database is accessed to obtain content for the user (358), as described hereinabove. When the advertisement content is received, the VPM (video processing module) 172 is invoked to mix the advertisement and video (360). If



the user interacts and inputs data (as described hereinabove with respect to Fig. 4), the input is written to the database (362).

During the call, the user has the possibility of choosing between a channel containing messages and a payment channel (a channel selling services for a fee).  
5 Calls on the payment channel are also recorded for any follow up and debit as may be necessary. In the course of the call, users on the payment channel will be able to request to be transferred to the message channel.

Once the call is completed, there is an option for the playback of the user's selections (364), and if requested, any input by the user is written to the database  
10 (366). At the end of the call, the user portfolio 368 and event journal 370 are updated.

At the end of the video conversation, data is sent to the user relating to the messages which were seen/chosen. This enables him to receive additional details and later to initiate a conversation with the sales center or with someone else for  
15 consultation for example.

The operation of the main gatekeeper is illustrated in the flow chart of Fig.  
11.

The present invention is described for exemplary purposes only as a method for video-conferencing clients and video-phone users. The advertisements  
20 and messages may be displayed during a videoconference call, but can be activated to be displayed during non-phone use.

The communication system also allows for the 'add-on' of many features, utilizing known technology. For example, the user is able to activate a response to  
the advertisement by pressing the advertisement via a touch screen, or other

method. The response including information of the place the user touched the screen or information on the other method of selection is sent to the remote management center via the communication link.

The action available to the user response include at least one of the  
5 following methods: Calling back to the user, showing other screen for further selection or for giving other information, giving access to the Internet for browsing the web, sending the user an information pack or purchasing.

The information of the advertisement presentation and information about the user is sent to the remote management center automatically. This information  
10 can be used for statistical purposes and for enabling the advertisers to better target the user, to analyze responses from the market, and to control the advertisement / messages rating.

Image recognition and voice recognition can be combined and integrated into the communication system and can be activated during a call to provide  
15 information that can identify the user and allow accurate selection of the advertisements.

The user is able to get access to a pre-defined call-center by pressing a "Call-Me" button, for example. The destination for this pressing is pre-programmed by the service operator, and can be changed from remote site by the service  
20 operator.

The user can also obtain directory services by pressing a pre-defined button. This can display a list of categories from which the user is able to select by browsing. These categories and directory may be stored on the communication/video-conferencing system memory or on a remote site. The

directory categories, and selection may be presented on a smart criteria such as last-called, last selected, preferred categories or other methods.

The display on the screen, the video received and the video sent may be controlled and changed by image processing methods for replacing the background by a pre-defined or stored background, or for placing the advertisements or any graphical background on the video without hiding the users, or for other purposes.

The user can also browse the World Wide Web by Internet methods or respond and send and receive e-mails via the same system. The user can browse the advertisements/messages and respond to them, during after the call. The user may respond to advertisement/messages or access the Internet during the call and can forward the information to another party in the call.

The remote management center can override the current state of the video-conferencing/ communication system or during a conversation, for any a 'breaking news' item, for example.

As will be appreciated by persons knowledgeable in the art, the various embodiments referred to are given by way of example only and do not in any way limit the present invention. For example, the method is not limited to video-phone users but is also applicable to other display mediums such as television and personal computers connected to a suitable communications link.

It will be appreciated that the present invention is not limited by what has been described hereinabove and that numerous modifications, all of which fall within the scope of the present invention, exist. Rather the scope of the invention is defined by the claims, which follow:

## CLAIMS

1. A method for communicating with a targeted audience, comprising the steps of:
  - identifying the targeted audience;
  - 5       determining the subject matter of interest to said targeted audience;
  - inserting the said subject matter of interest data into a video stream being transmitted to said targeted audience, thereby amending said video stream ; and
  - 10       displaying said amended video stream to said targeted audience.
2. The method according to claim 1, wherein said step of identifying comprises the step of:
  - identifying the image of the targeted audience being transmitted
  - during a video call by means of one of a group: including an image
  - 15       recognition engine and a voice recognition device.
3. The method according to claim 1, wherein said step of inserting comprises the steps of:
  - decoding the incoming video stream;
  - mixing said incoming video stream with the subject matter of
  - 20       interest;
  - encoding said mixed video stream; and
  - transmitting said mixed video stream to the targeted audience.

4. The method according to claim 1, wherein said step of determining comprises the steps of:

analyzing any of a group of criteria including time and dates of the call, priority rules, user-based rules and call status and advertisement history information; and

applying pre-defined weights to the results of said analysis.

5. The method according to claim 1, wherein said video stream is transmitted over the Internet and wherein a remote management server and a gateway are in communication with the Internet and wherein said gateway includes a video processing module for controlling the steps of identifying inserting and determining.

6. The method according to claim 1, wherein said step of inserting is carried out in real time.

7. The method according to claim 1, wherein said subject matter of interest includes any of a group including advertisements, messages and news items.

8. The method according to claim 5, and further comprising a telecommunications link in communication with the Internet.

9. The method according to claim 8, wherein said telecommunications link includes any of a group including wireless, PSTN and cellular networks.

10. The method according to claim 9, wherein said wireless networks include any of a group including CDMA, GPRS platform for mobile data

networking services, Wideband CDMA, IP protocol integration and  
platforms for mobile multimedia communications.

11. The method according to claim 1, and further comprising the step of:

the targeted audience activating a response to said displayed

5 video stream.

12. The method according to claim 11, wherein said step of activating a  
response comprises one of a group of actions including initiating a  
call-back, requesting the display of a linked screen, initiating a  
purchase or request for information and accessing the Internet.

10 13. The method according to claim 4, wherein said user based rules  
include:

demographic and socioeconomic data associated with the user.

14. The method according to claim 5, wherein said gateway further includes  
session analyzer for detecting user interaction.

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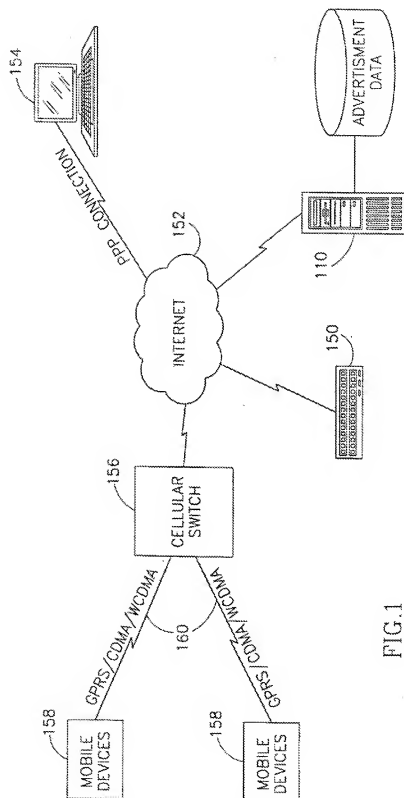


FIG.1

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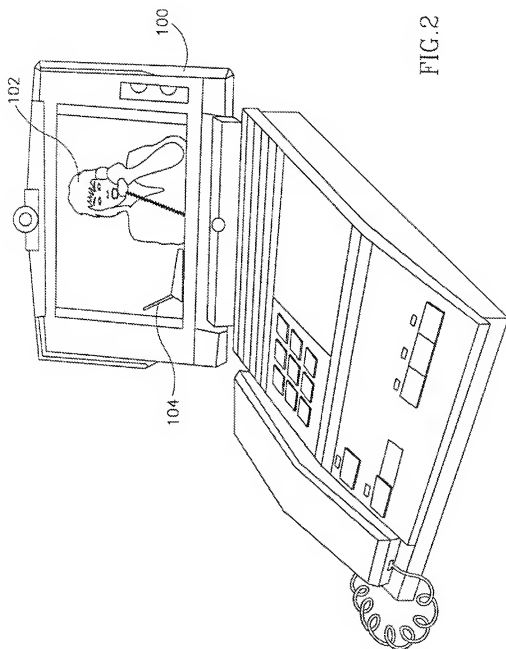


FIG. 2



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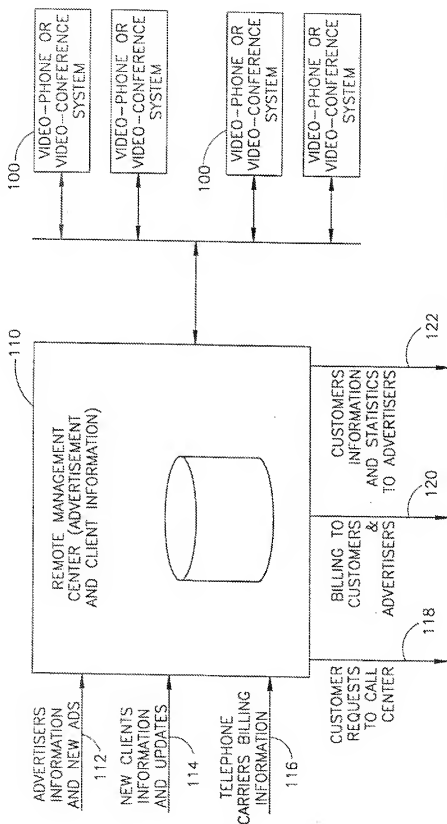


FIG.3

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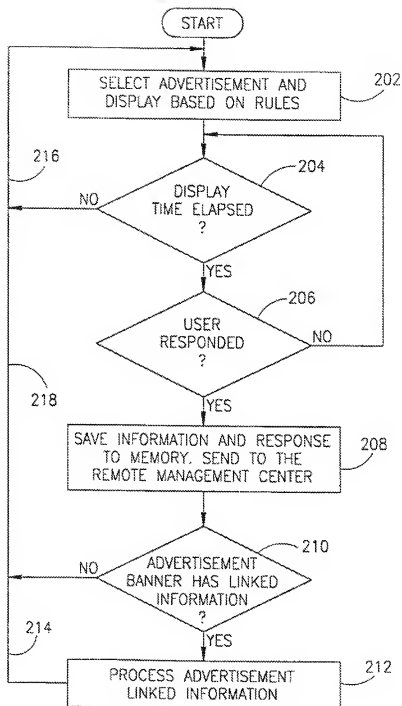
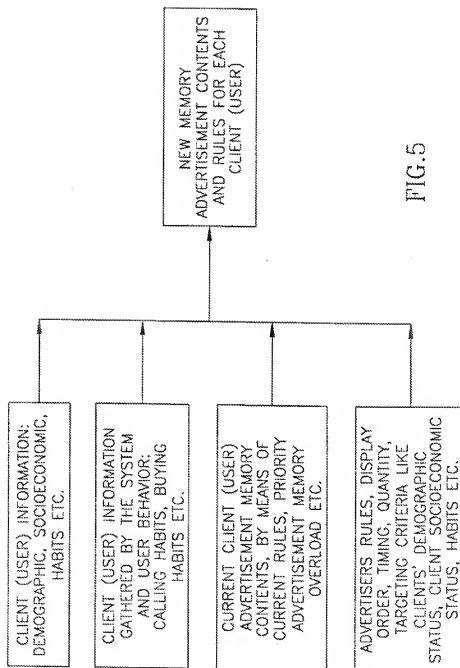


FIG.4

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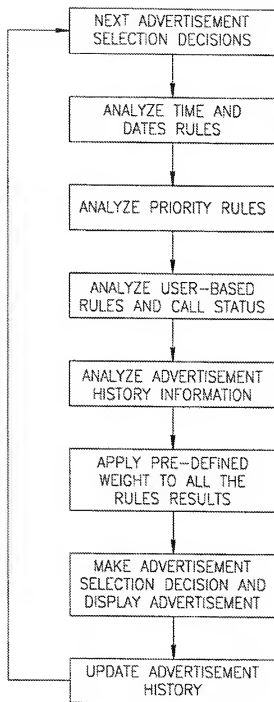


FIG.6

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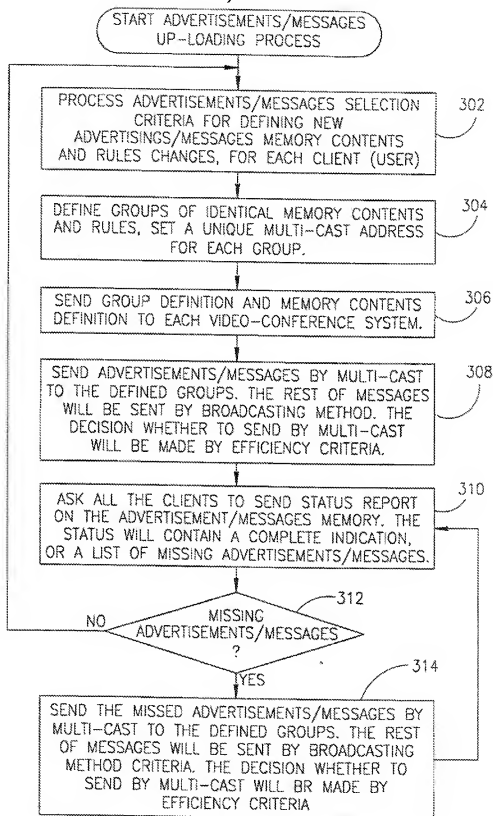


FIG.7

8/11

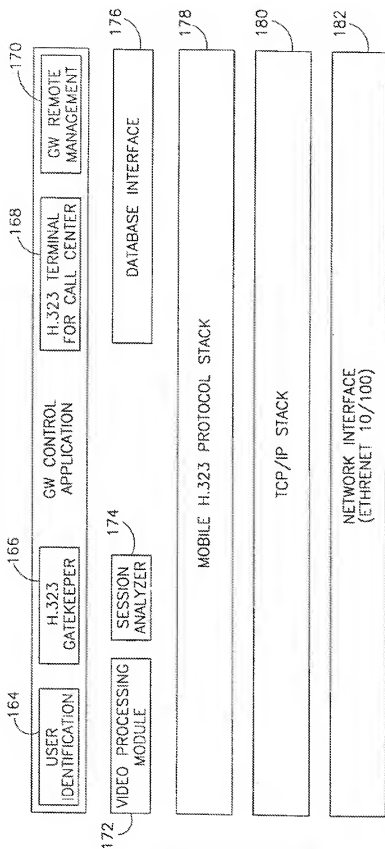


FIG. 8

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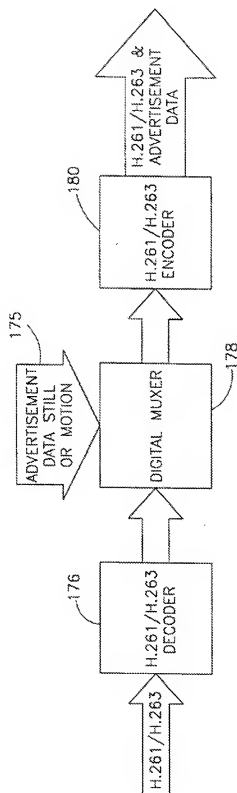


FIG. 9

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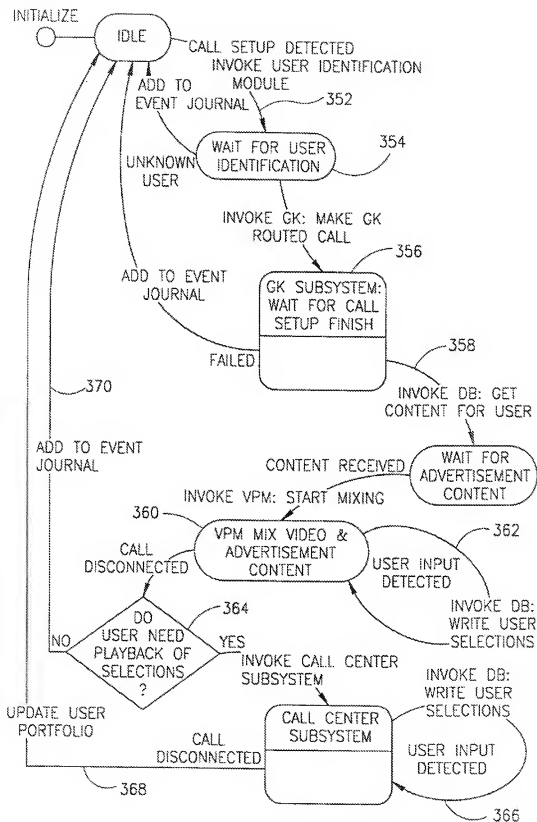


FIG.10



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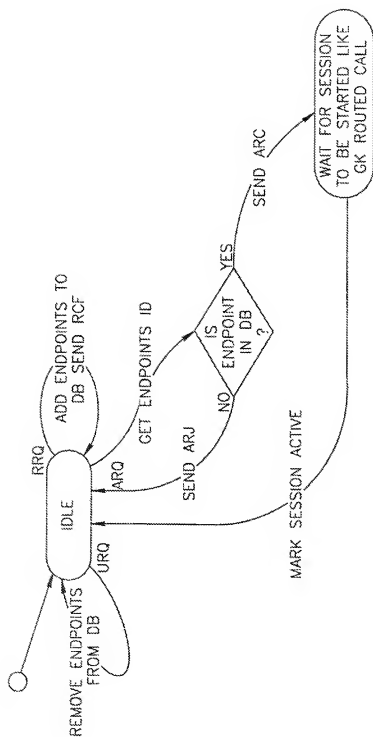


FIG.11

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL00/00313

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC(7) : G06F 15/16, 17/60 US CL : 709/204, 230 According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) U.S. : 709/204, 206, 230, 231, 246; 348/552; 455/575; 705/14 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) IEEE database search; EAST US patent search Terms: targeted/customized commercial/advertisement, client profiling, realtime video streaming		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,515,098 A (CARLES) 07 MAY 1996 ABSTRACT, Column 1, Lines 54-59, Column 2, Line 35 through Column 3, Line 62, Column 5, Lines 18-26	1-14
Y	US 5,861,881 A (FREEMAN et al.) 19 JANUARY 1999 ABSTRACT, Column 2, Lines 26-60, Column 4, Lines 16-31, Column 6, Lines 45 through Column 8, Line 11, Column 19, Lines 7-52, Claim 1 (Column 19, Line 62 through Column 20, Line 17)	1-14
A	US 5,724,091 A (FREEMAN et al.) 03 MARCH 1998 Entire document	1-14
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
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## INTERNATIONAL SEARCH REPORT

International application No.

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A, P	US 6,006,257 A (SLEZAK) 21 DECEMBER 1999 Entire document	1-14
X, P	US 6,029,045 A (PICCO et al.) 22 FEBRUARY 2000 ABSTRACT, Column 2, Line 49 through Column 4, Line 12	1, 3-14
X, P	US 6,084,628 A (SAWYER) 04 JULY 2000 ABSTRACT, Figures 1-4, Column 1, Line 41 through Column 2, Line 11, Column 2, Line 62 through Column 6, Line 12	1-14